

SEQUENCE LISTING

<110> CNRS

<120> NUCLEOTIDE SEQUENCES DERIVED FROM GENES CODING FOR
TRIMETHYLAMINE N-OXYDE REDUCTASE, AND USES THEREOF,
ESPECIALLY FOR THE DETECTION OF BACTERIA

<130> WOB 99 AX CNR DORA

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<150> FR9911543

<151> 1999-09-15

<160> 27

<170> PatentIn Ver. 2.1

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<211> 2487

<212> DNA

<213> Shewanella massilia

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<213> *Shewanella putrefaciens*

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<212> DNA

<213> Artificial sequence

<220>

<223> Description of the artificial sequence: partial
sequence coding for the TorA protein of
Photobacterium phosphoreum

<400> 4

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<211> 392

<212> PRT

<213> Shewanella massilia

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Ile Phe Trp Gly Gly Phe Asn Thr Ala Leu Glu Ala Thr Asn Thr Glu
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Cys Pro Asp Cys His Val Pro His Asn Trp Ser Arg Lys Ile Ala Arg
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<211> 2523

<212> DNA

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tcgctcgacg tcggcacctc gaagctggcg cagggcaact gcggccagac catcctcgcg 2460
gatgtcgaaa aatatgcggg gcgcgcgggt acggtgaccg tgttcgacac gccgaaggga 2520
ccc

```

<210> 7

<211> 2475

<212> DNA

<213> Rhodobacter capsulatus

<400> 7

```

atgacgaagt tttccggaac cgagctgcgc gcagagcttt accgcgcgc tttcctcagc 60
tactcggttg caccgggcgc gctgggcatg ttccggccgt cgcttctggc caagggcgcc 120
cgcccgagg cgctggccaa tggcacggtg atgtcgggca gccactgggg cgtctttacc 180
gcgacggtcg aaaacggccg cgccaccgcc ttacccccct gggaaaaaga cccgcacccg 240
acgccgatgc tggaaaggcg gctggactcg atctattcgc cgacgcggat caaatatccg 300
atggtgcggc gcgaattcct cgaaaaaggc gtgaatgctg atcgctccac ccgcggcaac 360
ggcgattttc gtcccgtcag ctgggatcag gcgctcgatc tgcatggctg cggcgaggtc 420
aaacgggtcg aaggagacct acggcccgca ggcgtctttg gcggtccta tggctggaaa 480
agccccgggc ggctgcacaa ttgcaccacg cttctgcgcc gcatgctgac gctggcgggc 540
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accgaagtca tgggtgtctg ggccgccgat ccgatcaaga cagcagatat cggctgggtg 720
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gacctgtatg taaaggactt catcgccaac tacacctcgg gcttcgacaa gttcctgccc 960
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ggcggtcccg ccgagacgat caaggaaact gcgcggctgt tcaaactgaa acgcacgatg 1080
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gatggcgggc gacgaagggg ccggaatggc tggcgcgag cggcgcttcg gtgtatccc 1320
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cggtcgaaat tcccggatgt gaagatggcc tattgggttg gcggaacccc ttcgtgtcac 1440

```

```

catcaggacc gcaaccgcat ggtcaaggcc tgggaaaaaac tggaaacctt catcgtgcat 1500
gacttccagt ggacgcccac ggcgcggcat gccgacatcg tgctgcccgc gacgaccagc 1560
tatgaacgca acgacatcga gacgatcggc gattattoga acaccggcat cctggcgatg 1620
aagaagatcg tcgagccgct ttacgaagcc cgcagcgatt acgacatctt cgccgcgggtc 1680
gccgaacggc tgggcaaggg caaggagttc accgaaggca aggacgagat gggctggatc 1740
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gcgaaggcgg tcgaa 2475

```

<210> 8
 <211> 404
 <212> PRT
 <213> Rhodobacter sphaeroides

<400> 8
 Met Gly Arg Ser Cys Gly Gln Ala Ser Glu Ala Lys Val Ile Gly Arg
 1 5 10 15
 Ile Trp Lys Ala Phe Trp Arg Pro Ser Thr Lys Trp Gly Leu Gly Val
 20 25 30
 Leu Leu Val Thr Gly Gly Ile Ala Gly Ala Val Gly Trp Asn Gly Phe
 35 40 45
 His Tyr Val Val Glu Lys Thr Thr Thr Thr Glu Phe Cys Ile Ser Cys
 50 55 60
 His Ser Met Arg Asp Asn Asn Tyr Glu Glu Tyr Lys Thr Thr Ile His
 65 70 75 80
 Tyr Gln Asn Thr Ser Gly Val Arg Ala Glu Cys Ala Asp Cys His Val
 85 90 95
 Pro Lys Ser Gly Trp Lys Leu Tyr Arg Ala Lys Leu Leu Ala Ala Lys
 100 105 110
 Asp Leu Trp Gly Glu Ile Arg Gly Thr Ile Asp Thr Arg Glu Lys Phe
 115 120 125
 Glu Ala His Arg Leu Glu Met Ala Glu Thr Val Trp Ala Asp Met Lys
 130 135 140
 Ala Asn Asp Ser Ala Thr Cys Arg Thr Cys His Ser Phe Glu Ala Met
 145 150 155 160
 Asp Phe Ala His Gln Lys Pro Glu Ala Ser Lys Gln Met Gln Gln Ala
 165 170 175
 Met Asn Glu Gly Gly Thr Cys Ile Asp Cys His Lys Gly Ile Ala His
 180 185 190

Lys Met Pro Asp Met Ala Ser Gly Tyr Arg Ala Leu Phe Ser Lys Leu
195 200 205

Glu Lys Ala Ser Gln Ser Leu Lys Pro Arg Lys Gly Glu Thr Leu Tyr
210 215 220

Pro Leu Arg Thr Ile Glu Ala Tyr Leu Glu Lys Pro Ser Gly Glu Lys
225 230 235 240

Ala Lys Ala Asp Gly Arg Leu Leu Ala Ala Thr Pro Met Gln Val Val
245 250 255

Asp Val Thr Gly Asp Trp Val Gln Val Ala Val Lys Gly Trp Gln Gln
260 265 270

Glu Gly Ala Glu Arg Val Ile Tyr Glu Lys Gln Gly Lys Arg Ile Phe
275 280 285

Asn Ala Ala Leu Ala Pro Ala Ala Thr Gly Ser Val Val Pro Gly Ala
290 295 300

Ser Met Val Asp Pro Asp Thr Glu Gln Thr Trp Thr Asp Val Ser Leu
305 310 315 320

Thr Ala Trp Val Arg Asn Arg Asp Leu Thr Gly Asp Gln Glu Ala Leu
325 330 335

Trp Gln Tyr Gly Lys Gln Met Tyr Asn Gly Ala Cys Gly Met Cys His
340 345 350

Val Leu Pro His Pro Glu His Phe Leu Ala Asn Gln Trp Ile Gly Thr
355 360 365

Leu Asn Ala Met Lys Ser Arg Ala Pro Leu Asp Asp Glu Gln Phe Arg
370 375 380

Leu Val Gln Arg Tyr Val Gln Met His Ala Lys Asp Val Glu Pro Glu
385 390 395 400

Gly Ala Ala Glu

<210> 9
<211> 2544
<212> DNA
<213> Escherichia coli

<400> 9
atgaacaata acgatctctt tcaggcatca cgtcggcggtt ttctggcaca actcggcggc 60
ttaaccgctc cccgggatgct ggggccgtca ttgttaacgc cgcgacgtgc gactgcggcg 120
caagcggcga ctgacgctgt catctcgaaa gagggcattc ttaccgggtc gcaactgggg 180
gctatcccg cgcggtgaa ggatggctgc tttgtggcgg cgaaaccgtt cgaactggat 240
aaatatccgt cgaaaatgat tgccggattg ccggatcacg tacacaacgc ggcgcgtatt 300
cgttatccga tggtagcgt ggactggctg cgtaagcgcc atctcagcga tacctcccag 360
cgcggtgata accgttttgt gcgcgtgagc tgggatgaag ccctcgacat gttctatgaa 420
gaactggaac gcgtgcagaa aactcacggg ccgagtgcct tgctgaccgc cagtgggttg 480
caatcgacgg ggatgttcca taacgcttcg gggatgcgtg cgaaacgtat tgccttgcat 540
ggtaatagcg ttggtacggg cggagattac tctaccggtg ctgcgcaggt gatcctgccc 600

```

cgcgtagtcg gttcgatgga agtgtatgaa cagcaaacct cctggccgct ggtattgcag 660
aacagcaaaa ccattgtgct gtggggctcc gatttgctga aaaaccagca agcgaactgg 720
tggtgcccgg atcacgatgt ttatgaatat tacgcgcagc taaagcgaaa gtcggccgcc 780
ggtgaaattg aggtcatcag catcgatccg gttgtcacat ccacccatga gtatctgggc 840
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cagatggcgg cgaacagaac gcaaattatt gctggctggg gcgtgcagcg tatgcagcac 1140
ggtgaacagt gggcgtggat gattgtggtt ctggcggcga tgctggggca aattggcctg 1200
ccaggtggtg gttttggttt tggctggcac tacaacggcg caggcacgcc gggcgtaaa 1260
ggcgttattc tgaatggttt ctccggctct acgtcgattc cgctgttca cgacaacagt 1320
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atTTTTGCCG gaactaaccC attccatcgc catcagcaga tcaaccgcat tattgaaggc 1500
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gccgatatcg tactgcctgc gaccacgcag tttgagcgta acgatctcga ccagtacggc 1620
aatcactcca accgtggcat tatcgccatg aaacagggtg tgccgccgca gttcgaggcg 1680
cgcaacgact tcgatatTTT ccgcgagctg tgccgtcgt ttaatcgcg agaagccttt 1740
accgaagggc tggacgaaat gggctggctg aaacgcattc ggcaggaagg tgtacagcaa 1800
ggcaaaggac gcggcgttca tctgccagcg tttgatgact tctggaataa caaagagtac 1860
gtcgagtttg accatccgca gatgtttgtt cgccaccagg cattccgcga agatccggat 1920
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ggtgggcctg gctcgcaaaa gtatccgttg catctgcaat ctgtgcatcc ggatttccga 2100
cttcactcgc agttatgtga gtcggaaaac ctgcgtcacg aatatacggg agcgggtaaa 2160
gagccagtat tcattaaccC gcaggatgcc agcgcgcgcg gtattcgtaa cgtgatgtg 2220
gtacgcgtct ttaacgctcg cggtcagggt atggcagggg cagtggtttc tgaccgctat 2280
gcacccggcg tggcagcaat tcacgaaggg gcatggtacg atccagataa aggcggcgag 2340
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cagctcgcgc aggcgaccag tgcgcacact acgctggtgg aaattgagaa gtacaacgga 2460
acagtggagc aggtgacggc gtttaacggc cccgtggaga tgggtggcgca gtgcgaatat 2520
gttcccgcgt cgcaggtgaa atca 2544

```

<210> 10

<211> 477

<212> DNA

<213> Artificial sequence

<220>

<223> Description of the artificial sequence: partial
sequence coding for the protein TorA of
Salmonella typhimurium

<400> 10

```

atgaaacagg tgggtgcgcc gcagtttgaa ggcgtaacg actttgatat tttccgcgat 60
ctctgccgac gctttaaccg tgaagcggca ttcacggaag gtcttgatga aatgggctgg 120
ctgaaacgca tctggcagga agggagccag cagggaagaa gtcgcggtat ccacttaccg 180
atTTTcGagg tGtTctGgaa tCaacaggag taCatcgagt ttgatcatcc gcagatgttt 240
gtacgccatc aggctttccg tgaagatccg gacctggagc cgttgggcac gccaaagggt 300
ttgatcgaga tttactccaa aaccatcgcc gacatgcaat acgacgatgg tcagggccat 360
cccatgtggg tcgaaaaaat cgaacgctcg catggcgggc cgggatcgca gcgctggccg 420
ctgcacttac aatccgtcca cctgatttc cgtctgcatt cccaactgtt gcgagtc 477

```

<210> 11

<211> 390

<212> PRT

<213> *Escherichia coli*

<400> 11

Met Arg Lys Leu Trp Asn Ala Leu Arg Arg Pro Ser Ala Arg Trp Ser
 1 5 10 15

Val Leu Ala Leu Val Ala Ile Gly Ile Val Ile Gly Ile Ala Leu Ile
 20 25 30

Val Leu Pro His Val Gly Ile Lys Val Thr Ser Thr Thr Glu Phe Cys
 35 40 45

Val Ser Cys His Ser Met Gln Pro Val Tyr Glu Glu Tyr Lys Gln Ser
 50 55 60

Val His Phe Gln Asn Ala Ser Gly Val Arg Ala Glu Cys His Asp Cys
 65 70 75 80

His Ile Pro Pro Asp Ile Pro Gly Met Val Lys Arg Lys Leu Glu Ala
 85 90 95

Ser Asn Asp Ile Tyr Gln Thr Phe Ile Ala His Ser Ile Asp Thr Pro
 100 105 110

Glu Lys Phe Glu Ala Lys Arg Ala Leu Leu Ala Glu Arg Glu Trp Ala
 115 120 125

Arg Met Lys Glu Asn Asn Ser Ala Thr Cys Arg Ser Cys His Asn Tyr
 130 135 140

Asp Ala Met Asp His Ala Lys Gln His Pro Glu Ala Ala Arg Gln Met
 145 150 155 160

Lys Val Ala Ala Lys Asp Asn Gln Ser Cys Ile Asp Cys His Lys Gly
 165 170 175

Ile Ala His Gln Leu Pro Asp Met Ser Ser Gly Phe Arg Lys Gln Phe
 180 185 190

Asp Asp Val Arg Ala Ser Ala Asn Asp Ser Gly Asp Thr Leu Tyr Ser
 195 200 205

Ile Asp Ile Lys Pro Ile Tyr Ala Ala Lys Gly Asp Lys Glu Ala Ser
 210 215 220

Gly Ser Leu Leu Pro Ala Ser Glu Val Lys Val Leu Lys Arg Asp Gly
 225 230 235 240

Asp Trp Leu Gln Ile Glu Ile Thr Gly Trp Thr Glu Ser Ala Gly Arg
 245 250 255

Gln Arg Val Leu Thr Gln Phe Pro Gly Lys Arg Ile Phe Val Ala Ser
 260 265 270

Ile Arg Gly Asp Val Gln Gln Gln Val Lys Thr Leu Glu Lys Thr Thr
 275 280 285

Val Ala Asp Thr Asn Thr Glu Trp Ser Lys Leu Gln Ala Thr Ala Trp
 290 295 300

Met Lys Lys Gly Asp Met Val Asn Asp Ile Lys Pro Ile Trp Ala Tyr
 305 310 315 320

[illegible]

```
<210> 12
<211> 21
<212> DNA
<213> Artificial sequence
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```
<220>
<223> Description of the artificial sequence:
      PCR primer
```

```
<400> 12
cggvgaytac tcbachggtg c
```

21

```
<210> 13
<211> 20
<212> DNA
<213> Artificial sequence
```

```
<220>
<223> Description de of the artificial sequence:
      PCR primer
```

```
<400> 13
atygatgcga tyctcgaacc
```

20

```
<210> 14
<211> 25
<212> DNA
<213> Artificial sequence
```

```
<220>
<223> Description of the artificial sequence:
      PCR primer
```

```
<400> 14
cgtamwsgtc gakatcgtr cgctc
```

25

```
<210> 15
<211> 20
<212> DNA
<213> Artificial sequence
```

<220>
 <223> Description of the artificial sequence:
 PCR primer

<400> 15
 gactcacaya wytgygagtg 20

<210> 16
 <211> 20
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Description of the artificial sequence:
 PCR primer

<400> 16
 tgrccdcgrk cgttaaagac 20

<210> 17
 <211> 20
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Description of the artificial sequence:
 PCR primer

<400> 17
 ccvggttcga gratcgcatc 20

<210> 18
 <211> 16
 <212> DNA
 <213> artificial sequence

<220>
 <223> Description of the artificial sequence:
 PCR primer

<400> 18
 cbgayatcst rctgcc 16

<210> 19
 <211> 20
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Description of the artificial sequence:
 PCR primer

<400> 19
 ggmgaytayt cbacmggygc 20

<210> 20

<211> 20
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Description of the artificial sequence:
 PCR primer

<400> 20
 twygarcgya acgaymtcga 20

<210> 21
 <211> 20
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Description of the artificial sequence:
 PCR primer

<400> 21
 ggvyctacc abscvccttc 20

<210> 22
 <211> 20
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Description of the artificial sequence:
 PCR primer

<400> 22
 atcarrccns wvggcgtgcc 20

<210> 23
 <211> 17
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Description of the artificial sequence:
 PCR primer

<400> 23
 gbcacrtcdg tytgygg 17

<210> 24
 <211> 20
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Description of the artificial sequence:
 PCR primer

<400> 24

acnccngara arttygargc

20

<210> 25
 <211> 20
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Description of the artificial sequence:
 PCR primer

<400> 25
 tgyathgayt gycayaargg

20

<210> 26
 <211> 20
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Description of the artificial sequence:
 PCR primer

<400> 26
 ccytttrtgrc artcdatrca

20

<210> 27
 <211> 17
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Description of the artificial sequence:
 PCR primer

<400> 27
 ttngcrtcra artgngc

17